

10/051,417

Relative to the claims, the following claims are canceled: 8-10; 15-17 24 and 25 for a total of 8 canceled claims. Furthermore, Claims 1, 11 and 18 are amended to define the adhesive wherein "the adhesive has sufficient cohesive strength to hold the valve cover in place during normal operating conditions." Support for this can be found on page 5, lines 18-20. Claims 2, 3, 4 are amended to depend from Claim 26 instead of Claim 1. Claim 12 is amended to depend from Claim 28. Claim 19 is amended to depend from Claim 30. New Claims 26-32 are added. Claims 26, 28 and 30 depend from Claim 1, 11 and 18, respectively, and add the further limitation that the adhesive demonstrates a cohesive strength of 250 psi or greater when measured in lap shear mode according to ASTM D3165-91 or in tensile mode according to ASTM D638 type 4. Support for this amendment can be found on page 5, lines 20-23. Claims 27, 29 and 31 depend respectively from Claims 26, 28 and 30 and add the limitation that the adhesive comprises a high temperature epoxy resin, polyimide, a hybrid polyimide, epoxy resin adhesive, a silicone, a fluorosilicone, an alkylborane initiated acrylic system or an epoxy novolac nitrile rubber adhesive. Support for this amendment can be found on page 5, line 31 to page 6, line 2. Also, added is Claim 32 which depends from Claim 28 which adds the further limitation that the valve cover and engine head do not have bolts and bolt holes to hold the valve cover in place. Support for this amendment can be found in Figure 2 and the description of Figure 2 found on page 11, lines 1-8.

Both clean copies and marked-up copies of the claims clearly showing the amendments are included herewith. As eight claims have been deleted and seven claims have added, no fees are due as a result of the amendments to the claims.

A new copy of PTO-1449 is included herewith wherein the patent number of Kasting is changed from 4,345,522 to 4,345,552.

Relative to the Rejection Under 35 USC§112, this rejection is obviated in view of the fact that Claims 10 and 17 have been deleted.

Relative to the rejections over the prior art, the following remarks are relevant. None of the references teach or suggest a valve cover assembly, an engine assembly or method of assembling an engine assembly wherein the adhesive used is a

10/051,417

structural adhesive which is capable of holding the valve cover in place during normal operating conditions of the engine. As Claims 1, 11 and 18 have been amended to include this feature, all of the present claims in the application contain this feature and are novel and unobvious.

Additionally, none of the references teach or suggest that the adhesive used to bond the valve cover to the engine or the adhesive as part of the valve cover assembly, demonstrates cohesive strength of 250 psi or greater according to the recited ASTM tests. As the references do not teach the use of an adhesive which has such a cohesive strength, the claims are novel and unobvious. Furthermore, the references do not disclose the recited structural adhesives as listed in Claims 27, 29 and 31, more particularly, a high temperature epoxy resin, a polyimide, a hybrid polyimide/epoxy resin adhesive, a silicone, a fluorosilicone, an alkylborane initiated acrylic adhesive system or an epoxy novolac/nitrile rubber adhesive.

Additionally, the references do not disclose assembling a valve cover to an engine head using a structural adhesive in the absence of bolt holes and bolts to hold the valve cover in place as required by Claims 2 and 32.

With respect to Mochizuki (U.S. Patent 4,985,523), the reference discloses an anaerobic-curing adhesive used for sealing joints of automobile engines such as the joint between oil pan and the engine block, a joint between an engine head and head cover and a joint of a transmission. The reference then describes an anaerobically-curing adhesive sealing compositions wherein the primary function is to seal the gaps between the various parts. There is no teaching or suggestion in Mochizuki that such a composition could bond a valve cover to an engine head in the absence of bolts and bolt holes, nor there is any teaching or suggestion that the adhesives disclosed are capable of bonding the parts together wherein the adhesive has sufficient strength to hold the valve cover in place during normal engine operating conditions, nor does it disclose that an adhesive having a lap shear of 250° psi or greater or greater can be used. It should be pointed that Mochizuki does not provide any description or drawings of a valve cover assembly or an engine assembly with a valve cover bonded directly to an engine head. Therefore, in the absence of

10/051,417

Mochizuki teachings of several key features of the invention, Applicants' claims are novel and unobvious.

Santella (U.S. 5,375,569) does not teach any of the recited features discussed hereinbefore. Santella relates to a valve cover having two molded parts, one being a more rigid, upper plastic part and a second more elastomeric part used to improve the seal between the valve cover and the engine head. In particular Santella discloses a gasket which is fabricated such that it is integral with the plastic valve cover and does not have to be separately assembled to the engine head. Santella further discloses the use of a sealant in reference to Figure 1, reference number 16 which is used to ensure that there is a good seal between the engine head and the gasket. Santella does not disclose the use of a structural adhesive which is capable of bonding the valve cover to the engine and holding the valve cover in place without any bolts or bolt holes. The Official Action argues that page 4, lines 10-18, discloses a valve cover that does not have bolt holes. This is a misreading of the reference. The cited passage refers to Figure 2(a). Figure 2(a) is a cut-a-away of the injection molded composite valve cover shown in Figure 2. By selecting the cut-a-away portion that was chosen, Figure 2(a) does not illustrate any bolt holes but as it is a cut-a-away of Figure 2, reference to Figure 2 indicates that bolt holes are present in the valve cover. Further, the reference shows in Figure 2(a) a means of securing the elastomeric gasket to the more rigid valve cover, this is done by injection molding the gasket number 20 into the flange of the rigid portion of the valve cover. Note that in Figure 2(a), a sealant is shown which is designed to improve the seal between the engine head and the valve cover but does not appear to function to hold the valve cover as other mechanical means of fixturing the valve cover in place are illustrated.

None of the other references disclose using a structural adhesive of high strength capable of holding the valve cover in place nor the chemistry of such valve cover and for this reason Applicants' claims are novel and inventive and the rejection of the claims should be withdrawn.

10/051,417

Applicants' hereby request entry of the amendments, reconsideration of the claims in view of the amendments and arguments made and solicit early allowance of Claims 1-7, 11-14 and 18-32.

Respectfully submitted,



Norman L. Sims
Registration No. 30,685
Phone: 248/391-6455

P. O. Box 1967
Midland, MI 48641-1967

44563A

-5-